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THE

# CANADIAN NATURALIST

AND

## Quarterly Journal of Science.

### ON PORTIONS OF THE SKELETON OF A WHALE FROM GRAVEL ON THE LINE OF THE CANADA PACIFIC RAILWAY, NEAR SMITH'S FALLS, ON- TARIO.

By J. W. DAWSON, LL.D., F.R.S.

Bones of large whales are of not infrequent occurrence on the less elevated terraces of the Pleistocene period on the Lower St. Lawrence. I have seen them at several places in the neighborhood of Metis, on the lowest sea terrace, now elevated only a few feet above the level of the sea, and they are reported to have been found on the second terrace at an elevation of 60 to 70 feet. Mr. Richardson, late of the Geological Survey, informs me that he has seen them in several other places on the lower terraces. It has also been reported that bones of a whale were found on Mt. Camille in rear of Metis at a considerable elevation; but Mr. Richardson, who visited the locality, failed to verify the statement. The bones found on the lower, and therefore modern terraces are usually in a good state of preservation and have a very recent appearance. The above statements relate to remains of the larger whalebone whales.

Remains of the *Beluga* or small white whale were found by the late Dr. Zadok Thompson, author of the "Natural History of Vermont," in the marine clay in the township of Charlotte, Vermont, at an elevation of 150 feet above the sea. They were associated with shells of *Saxicava* and *Leda*. The species was supposed to be distinct from the *B. Catodon*, Gray, and was named by Thompson *B. Vermontana*. I have found detached bones of *Beluga* in the Post-pliocene clays of Rivière du Loup, and considerable portions of a skeleton were found in the

excavations for the Intercolonial Railway, on the south side of the Baie des Chaleurs, and were described by Gilpin in the Transactions of the Nova Scotia Institute of Natural Science.\* Bones have also been found in the brick-clays near Montreal, and a specimen was discovered several years ago in sand holding *Saxicava*, near Cornwall, Ontario. The last-named specimen was studied by Mr. Billings, and its bones compared with those of the modern species in the McGill College Museum. On this evidence Mr. Billings concluded that it belonged to the modern species, and I believe extended this conclusion to Dr. Thompson's specimen, the distinctive characters of which, as stated by that naturalist, seem not to exceed the individual differences in modern specimens.

But though the *Beluga*, which now extends its excursions far up the St. Lawrence, and has even been captured in the vicinity of Montreal, occurs as far west as Cornwall, no remains of the larger whales have, so far as I am aware, been found so far inland until the discovery of the specimens referred to in the present note. These were found, as I am informed by Archer Baker, Esq., General Superintendent of the Canada Pacific Railway, "in a ballast pit, at Welshe's, on the line of the C. P. Railway, three miles north of Smith's Falls, and thirty-one miles north of the St. Lawrence River, in the Township of Montague, County of Lanark. They occurred in gravel at a depth of 30 feet from the surface, and about 50 feet back from the original face of the pit."

Mr. Peterson, C.E., has been kind enough to obtain for me the elevation of the place where the remains were found, as indicated by the railway levels. It is 420 feet above the level of the St. Lawrence at Hochelaga, or as nearly as possible 440 feet above sea level. It is interesting to observe that this corresponds exactly with the height of one of the sea terraces on the Montreal mountain, and is only 30 feet lower than the well-marked beach with sea shells above Côte des Neiges, on the west side of the Mountain. The highest level at which Post-pliocene marine shells are known to occur on Montreal Mountain, is near the park-keeper's house, at an elevation of about 520 feet. These marine deposits of Montreal are of the same geological period with the Cetacean remains in question, so that the animal to which these belonged may have sailed past the rocky islet which

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\* Vol. II., 1874.

then represented Montreal Mountain at an elevation of 400 feet above the lower levels of the city, and in a wide sea which then covered all the plain of the lower St. Lawrence.

The deposit in which the remains occurred is no doubt the equivalent of the Saxicava sand and gravel, and was probably a beach or bank near the base of the Laurentian hills, forming the west side of a bay which then occupied the Silurian country between the Laurentian hills north of the Ottawa, and those extending southward toward the Thousand Islands, and which opened into a wide extension of the Gulf of St. Lawrence, reaching to the hills of Eastern Canada and New England, and westward, perhaps, to the Niagara escarpment at the head of Lake Ontario. Such a sea might well be frequented by whales in the summer season, and individuals might occasionally be stranded on shallows or driven ashore by gales or by the pressure of floating ice.

The bones secured consist of two vertebrae and a fragment of another with a portion of a rib, and others are stated to have been found. They are in good preservation but have become white and brittle through the loss of their animal matter. On comparison with such remains of whales as exist in the Peter Redpath Museum, and with the figures and descriptions of other species, I have little doubt that they belong to the Humpback whale, *Megaptera longimana* of Gray, *Balaena boops* of Fabricius, a species still common in the Gulf of St. Lawrence, and which extends its range some distance up the River, and is more disposed than most others of the large whales to haunt inland waters, and to approach the shores. I have seen it as far up the river as the mouth of the Saguenay, and there is reason to believe that occasionally it runs up much further. It is a species well known to the Gaspé whalers and often captured by them. Of course with so little material it is not possible to be absolutely certain as to the species, but I think it may safely be referred to that above named. The larger of the two vertebrae, a lumbar one, has the centrum eleven inches in transverse diameter and is seven inches in length. The smaller, a dorsal, is ten inches in its greater diameter and four in length. Through the kindness of Mr. Baker, the specimens have been deposited in the Peter Redpath Museum of McGill University.

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POLYZOA OF THE QUEEN CHARLOTTE ISLANDS.  
PRELIMINARY NOTICE OF NEW SPECIES.

By the Rev. THOMAS HINCKES, B.A., F.R.S.

In this paper I propose to give a diagnosis of a number of Polyzoa from the Queen Charlotte Islands, entrusted to me by Dr. G. M. Dawson, on behalf of the Geological Survey of Canada.

These forms will be more fully described and figured in a special report on the Polyzoa of these islands, which I hope to publish hereafter. As the preparation of the plates may occupy some time, it seems better to record the new species at once, and so avoid the risk of being anticipated after much labor has been expended on the work.

All critical notes on the species will be reserved for the Report.

Family *Membraniporidae*.

MEMBRANIPORA, De Blainville.

MEMBRANIPORA NIGRANS, N. SP.

*Zoecia* ovate (variable, sometimes arched above and narrowing downwards, sometimes broad-ovate, sometimes oval), irregularly disposed, margins much elevated, crenate, the whole front of the cell covered by a rather coarse stout membrane of a black color; oral valve large; on each side at the top a pointed *avicularium*, placed on the margin, depressed at the base, the beak sloping upwards, mandible directed obliquely downwards; very large *avicularia*, slightly raised in front, with a broad triangular mandible, which is bent abruptly in the middle, scattered amongst the zoecia. *Oecium* very shallow, just covering the extremity of the cell, smooth, with a raised rib across it a little above the oral margin.

*Zoarium* of a deep black color, forming a large irregularly spreading crust.

*Loc.* Houston-Stewart Channel, Queen Charlotte Islands (*Dr. G. M. Dawson*).

MEMBRANIPORA EXILIS, N. SP.

*Zoecia* oblong, quineuncial, subtruncate above and below, set closely together, of considerable size and delicate material, margin thin, a good deal raised, the front wall wholly membranous; at the top of the cell 2 spines, and 3 or 4 on each side (or some-

times a smaller number), situated on the upper half of the cell, pointed, slender, suberect, jointed to a tubular base; a sessile *avicularium* on the margin at one side (often absent), just below the top, beak sloping upwards, scarcely bent at the extremity, mandible blunt, directed obliquely outwards. *Oocia* (?)

*Loc.* Houston-Stewart Channel, Queen Charlotte Islands, enveloping *Celtaria borealis*, Busk, with a very thin crust (*Dr. G. M. Dawson*).

MEMBRANIPORA CONFERTA, N. SP.

*Zoecia* oval, quineuncial, set closely together, front wall wholly membranous, margin thin, smooth; on each side about 4 sharply pointed spines, and (often) a central one below, which bend rather abruptly over the area and meet in the middle; an *avicularium* at each side on the margin, just below the upper end, slightly raised, pointed, the mandible directed upwards, a small erect spine below the *avicularia*; at the bottom of the cell a single pointed *avicularium* with triangular mandible variously turned, *Oocium* rounded, smooth, with a variously shaped depressed area (or fossa) in front, composed of thinner material than the rest of the surface, and appearing dark-colored as compared with the surrounding dense white crust.

*Loc.* Houston-Stewart Channel, Queen Charlotte Islands (*Dr. G. M. Dawson*).

MEMBRANIPORA LEVATA, N. SP.

*Zoecia* small, oval, distinct, quineuncial, margin very slightly raised, thin, smooth, the whole front closed in by a smooth, light-colored, and rather glossy membrane, which lies very much on a level with the edge of the cell; above each zoecium, on a somewhat quadrate area, a small nodule, with a pointed *avicularium* on one side of it, the mandible directed transversely upwards. *Oocium* rounded, smooth, umbonate.

*Loc.* Houston-Stewart Channel, Queen Charlotte Islands (*Dr. G. M. Dawson*).

MEMBRANIPORA ECHINUS, N. SP.

*Zoecia* quineuncial, oval, distinct, separated by rather deep interspaces, 2 spines at the top and 7-8 slender, pointed, and rather tall spines down each side, which slant inwards but do not meet in the centre; on each side, springing from below the second spine from the top, a pedicellate *avicularium*, the upper part large and much swollen (closely resembling a "bird's

head,"), very slightly hooked at the extremity, apparently jointed to an extremely thin pedicle, mandible slender, pointed. *Oecium* (?).

*Loc.* Houston-Stewart Channel, Queen Charlotte Islands (*Dr. G. M. Dawson*).

Family *Cribrilinida*.

CRIBRILINA, Gray.

CRIBRILINA FURCATA, N. SP.

*Zoecia* ovate, quineuncial, very regularly disposed, moderately convex; surface smooth and lustrous, often of a reddish-brown color, on each side four to six shallow grooves, radiating to a median line, and a central one below, which are occupied by a row of roundish pores set very closely together, the ridges between them slightly raised, usually bearing several elliptical pores: orifice arched above, straight below, much broader than high, on each side a stout bifid spine (occasionally simple); peristome much thickened in front and rising into a central muero. *Avicularia* none. *Oecium* large (covering about half the cell above it), rounded, taller than broad, depressed in front, with a shallow oral arch; surface smooth, rather thickly punctured.

*Loc.* Off Cumshewa Harbor, Queen Charlotte Islands (*Dr. G. M. Dawson*).

CRIBRILINA HIPPOCREPIS, N. SP.

*Zoecia* ovate, quineuncial; surface lustrous, flattish (sutures very shallow), traversed by radiating ridges (three to five on each side), which pass from the sides to the centre (no median keel), the grooves between them occupied by a line of rather large oblong pores; at the margin of each ridge an elliptical foramen, covered in by a delicate membrane: orifice large, well arched above, constricted a little above the lower margin, which is straight; operculum of a rich reddish brown; peristome not elevated, lower margin much thickened, usually terminating on each side in a knob; large, elongate, depressed spatulate avicularia scattered amongst the cells. *Oecium* (?).

Surface of zoarium flat; color brown, with a tinge of red, in old states white and highly calcified.

*Loc.* Cumshewa Harbor and Houston-Stewart Channel, Queen Charlotte Islands, on shell (*Dr. G. M. Dawson*).

Family *Myriozoidae* (part.), Smitt.

SCHIZOPORELLA, Hincks.

SCHIZOPORELLA CRASSILABRIS, N. SP.

*Zoecia* large, elongate, ovate, quineuncial, very distinct, convex, sutures not very deep; surface dense, punctured (the punctures often obliterated by the calcification; orifice sub-erect suborbicular, with a broad rounded sinus occupying nearly the whole of the lower margin; peristome raised and thickened, forming a wall round the orifice, often massive in front, where it is carried out into a broad projection, which is notched or sinuated in the centre. *Acicularia* none. *Oecium* large, rounded, broader than high, with rather large punctures.

*Loc.* Houston-Stewart Channel, Queen Charlotte Islands 15-20 fms. (*Dr. G. M. Dawson*).

SCHIZOPORELLA LONGIROSTRATA, N. SP.

*Zoecia* ovate, disposed in lines, moderately convex, (sutures shallow); surface roughened or minutely granulated, covered with an epitheca; orifice arched above, lower margin extended into a wide rounded sinus; peristome thin, elevated at each side; on one side, generally a little below the orifice, an elongate, slender, pointed, dependent *acicularium*, the mandible (which is broad at the base and tapering above) directed obliquely downwards, usually turned slightly outwards. *Oecium* rounded flattened in front, thickly punctured, with a shallow oral arch.

*Loc.* Off Cumshewa Harbor, on shell (*Dr. G. M. Dawson*).

SCHIZOPORELLA INSCULPTA, N. SP.

*Zoarium* foliaceous and bilaminar or incrusting. *Zoecia* large, ovate, quineuncial, depressed separated by raised lines, sutures shallow; surface vitreous, glossy, thickly covered over its whole extent with punctures; orifice arched above, the lower margin almost entirely occupied by a wide very shallow sinus; peristome thin, moderately raised, extended in front (beyond the sinus) so as to form a small chamber, in which is a rounded orifice (? *acicularium*). *Oecium* profusely developed, very large (covering about two-thirds of the cell above), elongate, rounded above, with a tall oral arch, thickly covered with slightly granulated ridges, which radiate from the opening to the base.

*Loc.* Queen Charlotte Islands, under 30 fms., attached to a stem, and on shell (*Dr. G. M. Dawson*).



## SCHIZOPORELLA MACULOSA, N. SP.

*Zoecia* quincuncial, rather small, moderately convex, sutures shallow; surface shining, covered with small punctures, which are closed in by a brownish membrane, and give a spotted appearance to the front wall; orifice arched above, with a shallow bluntly-pointed sinus below, not contracted at the opening; peristome slightly thickened, on one side just below the orifice (or occasionally on both sides) a small rounded *avicularium* on a prominent boss. *Oecium* (?).

*Loc.* Queen Charlotte Islands, on shell (Dr. G. M. Dawson).

## SCHIZOPORELLA TUMULOSA, N. SP.

*Zoecia* quincuncial, very regularly arranged, very convex, ovate, much elevated centrally below the mouth, the wall sloping steeply down to the margin of the cell; surface dense, smooth, rather glossy, areolated round the edge, ridges radiating towards the centre; orifice orbicular, with a small central sinus, not contracted at the opening, peristome not elevated; immediately below the orifice, at one side of the sinus a rostrum, bearing on one side a pointed *avicularium*, the beak very slightly bent at the extremity, mandible directed upwards, the rostrum rising into a short mucronate point behind the *avicularium*; very commonly on the front of the cell near the bottom a much raised *avicularium* (mounted on a prominent elevation), with a pointed mandible directed straight outwards. *Oecium* rounded, smooth, much broader than high, with a tall oral arch, filled in by a calcareous plate.

*Loc.* Off Cumshewa Harbor, Queen Charlotte Islands, in 20 fms., forming a brownish spreading crust (Dr. G. M. Dawson).

## SCHIZOPORELLA DAWSONI, N. SP.

*Zoecia* ovate, quincuncial, very moderately convex, separated by raised lines, highly calcified, vitreous; surface reticulato-punctate (punctures appearing as deep shafts in the vitreous crust); orifice arched above, much broader than high (narrow between the upper and inferior margins); a shallow rounded sinus in the centre of the lower margin, not contracted at the opening; peristome perfectly simple, not raised. *Avicularia* none. *Oecium* rounded, closely united to the cell above, somewhat depressed in front, glossy, covered with rather large punctures; a prominent, thickened border round the opening.

*Loc.* Virago Sound, Queen Charlotte Islands (Dr. G. M. Dawson).

